Appendix B

Deployment Operating Tools

This Appendix discusses the many different systems used as deployment operating tools.

OPERATING TOOLS

B-1. The different systems listed below are, in fact, operating tools used for deployment.

GLOBAL COMMAND AND CONTROL SYSTEM-ARMY

B-2. GCCS-A provides a single seamless command and control system built around a common operating environment and is being integrated with the GCCS. Integration will be partially achieved from the "best of breed" process as GCCS-A and GCCS share and reuse software modules. The Joint Service/Agency GCCS engineering team, sponsored by the Defense Information Systems Agency is identifying these software modules. GCCS-A is fundamentally GCCS with additional Army functionality.

JOINT OPERATIONS PLANNING AND EXECUTION SYSTEM

B-3. JOPES is the integrated, joint, conventional command and control system used by JPEC to conduct joint planning, execution and monitoring activities. JOPES supports senior-level decision-makers and their staffs at the NCA level and throughout the JPEC. It is a combination of joint policies, procedures, personnel, training and a reporting structure supported by automated data processing systems, reporting systems, and the GCCS. JOPES is a GCCS application.

ARMY MOBILIZATION AND OPERATIONS PLANNING AND EXECUTION SYSTEM

B-4. AMOPES is the Army supplement to JOPES. Army components plan Army forces and resources to meet combatant commanders' needs using JOPES. AMOPES provides the interface between unified plans for deployment and Army plans for mobilizing forces and resources. AMOPES identifies active and reserve component major Army combat forces available to execute operational plans. It sets priorities for the apportionment of CS and CSS units in conjunction with OPLANs. AMOPES provides mobilization and deployment definitions and guidance for planning and execution along with a detailed description of the Army's Crisis-Action System.

COMPUTERIZED MOVEMENT PLANNING AND STATUS SYSTEM

B-5. COMPASS is a FORSCOM system that provides deployment planning systems with accurate Army unit movement requirements. COMPASS describes unit property and equipment in transportation terms. It converts UMD into a COMPASS AUEL and maintains UMD for use in mobilization and deployment planning. This data originates from the UMD provided by Army units. The preferred system to transmit UMD to COMPASS is TC-ACCIS. ITOs (UMCs) validate and transmit the data to FORSCOM COMPASS. COMPASS then reformats the data and updates JOPES. Detailed guidance on how to prepare and submit UMD is in FORSCOM Regulation 55-2.

TRANSPORTATION COORDINATOR-AUTOMATED COMMAND AND CONTROL INFORMATION SYSTEM

B-6. The TC-ACCIS is an information management and data communications system that Army units (active and reserve) use to plan and execute deployments. System capability includes the ability to create and maintain unit movement data, prepare convoy requests, create military shipping labels and other movement documentation, and prepare vehicle load cards and vehicle/container packing lists. Principal system users within division and installation are the UMOs, ITO, UMCs, ICUMOs, and DTO. Selected TC-ACCIS functionality will migrate to TC-AIMS II.

B-7. Units maintain their AUEL and develop their DEL using TC-ACCIS. TC-ACCIS software resides on computers at the ITOs of CONUS installations and ITOs or movement control units in overseas theaters. The ITO, using the central computer, will consolidate requirements and transmit equipment lists and transportation requests to systems outside TC-ACCIS. For example, CONUS ITOs transmit AUEL and DEL to FORSCOM's COMPASS database. The information can then be used to update JOPES. Through TC-ACCIS, the ITO also provides MTMC the deployment requirements (such as DEL), domestic routing requests, export traffic release requests, and passenger transportation requirements.

DEPARTMENT OF THE ARMY MOVEMENTS MANAGEMENT SYSTEM-REDESIGNED

B-8. DAMMS-R provides an automated movement information management capability to movement managers involved in providing movement control and allocation of common user land transportation in a theater. It also provides theater mode operators with a tool to assist in the management of their assets, including personnel, equipment, and terminal/trailer transfer points. The system has a financial management capability to assist in maintaining records and payment for commercial movements. DAMMS-R consists of six separate but interrelated subsystems used

by transportation planners, movement managers, mode operators, traffic controllers, transshippers, and unit movement personnel. These subsystems are the shipment management module, movement control team operations module, mode operations module, convoy planning module, highway regulation module and transportation addressing module.

B-9. Currently, DAMMS-R is fielded in two Blocks. Block 1 includes the shipment management, movement control team operations, mode operations and transportation addressing modules; and block 2 contains the highway regulation and convoy planning modules. DAMMS-R Block 3 will replace Block 1. Selected DAMMS-R functionality will migrate to TC-AIMS-II.

GLOBAL TRANSPORTATION NETWORK

B-10. GTN is an automated command and control information system that provides the family of transportation users and providers with an integrated view of transportation information. It provides USTRANSCOM the ability to perform command and control operations, planning and analysis, and business operations to meet customer requirements. GTN also provides ITV for the DTS. GTN collects and integrates transportation information from selected DOD systems for use by transportation data customers– the NCA, CINCs, USTRANSCOM, and the Services. The system provides these users the ability to monitor movement of forces, cargo, passengers, and patients and movement of military and commercial airlift, sealift and surface assets.

B-11. GTN is available in both WWW and client server applications. The initial operational capability contains the ITV functionality. The command and control functionality and other capabilities are scheduled in subsequent deliveries.

JOINT TOTAL ASSET VISIBILITY

B-12. JTAV is being developed as a joint task force logistics management AIS to provide an in-theater TAV capability. JTAV provides the capability to fuse information from selected AISs into one picture. Through JTAV, theater logisticians will access in-transit, in-storage, and in-process information in GTN, the inventory control point AIS, and the LIPS. Additionally, JTAV will interface with Services' logistics databases to capture visibility of assets held by theater forces and with the theater transportation information system to provide visibility of shipments within the theater. JTAV will merge this information with in-theater unit information and other in-theater-related logistics information for both inbound and outbound assets. The JFC will use the logistics information in JTAV to enhance planning for the deployment of forces and materiel, the diversion of forces and materiel in-transit,

and, if required, to meet changing contingency requirements. Also for the management of in-theater assets, cross leveling and distribution, and for the redeployment of forces and retrograde of materiel.

DEFENSE TRANSPORTATION TRACKING SYSTEM

B-13. The mission of DTTS is ensure the safe and secure movement of all DOD sensitive conventional arms, ammunition and explosives and other sensitive material using satellite technology and 24-hour staff oversight, and to support DOD's ITV and TAV initiatives. DTTS monitors all sensitive shipments including non-ordnance related classified, pilferable, hazardous, and high value cargo moving from consignor to consignee. The monitoring is accomplished by using periodic satellite positioning and other coded/text messages from equipped vehicles. DTTS also identifies and coordinates responses to intransit accidents/incidents. DTTS provides ITV and expedites movements within CONUS for all military services, and other DOD and government agencies and programs. The ITV data is also provided to GTN. The DTTS is currently fielded and in operation in CONUS and Europe.

AUTOMATED AIR LOAD PLANNING SYSTEM

B-14. AALPS provides DOD with an automated information system to support the process and functions of aircraft estimation, aircraft gross load planning, deliberate load planning and execution, and tracking of movement statistics during deployments.

TRANSPORTATION COORDINATORS' AUTOMATED INFORMATION FOR MOVEMENT SYSTEM II

B-15. TC-AIMS II is a joint information management system that provides functionality for facilitating the movement of unit personnel, equipment, and supplies during peace and war, and provides visibility data of those forces from home station to the conflict and back. Its primary mission is to support the warfighter in the planning and execution of deployment, sustainment, and redeployment of forces during peace and war. TC-AIMS II will integrate current DOD transportation systems supporting installation and unit movement requirements into a single system.

B-16. TC-AIMS II includes functionality found in three separate Service legacy systems: the Air Force's CMOS, the Army's TC-ACCIS, and the Marine Corps' TC-AIMS. Planned system functionality includes the following:

- providing source item level detail information on equipment and personnel to the separate Service and/or Joint TPFDDs,
- rail loading and convoy planning/scheduling,
- automated MILSTAMP documentation,
- common user lift requests to TCCs,
- creating and maintaining UEL/DEL, and
- sharing load plan information with air/ship stow planning systems.

B-17. The system will also provide GTN with unit movement ITV information for passengers and cargo. TC-AIMS II is currently in prototype development.

AUTOMATED IDENTIFICATION TECHNOLOGY

B-18. AIT encompasses a variety of read and write storage technologies that capture asset identification information. These technologies include bar codes, magnetic strips, integrated circuit cards, OMCs and RF identification tags. They are used for marking or "tagging" individual items, multipacks, air pallets, and containers. AIT devices offer a wide range of data storage capacities from a few characters to thousands of bytes. The devices can be interrogated using a variety of means, including contact, laser, or RF. The information obtained from the interrogations can then be provided electronically to automated information systems. AIT includes the hardware and software to create the storage devices, read the information stored on them, and integrate that data with other logistics data. AIT also includes the use of satellites to track and redirect shipments.

BAR CODES

B-19. A bar code is an array of parallel, narrow, rectangular bars and spaces that represent a group of characters in a particular symbology. The bars and spaces are arranged in an order defined by the symbology. Bar codes are applied on labels, paper, plastic, ceramic, and metal by a variety of marking techniques. A reader scans the bar code, decodes it, and transfers data to a host computer. Within DOD and the Army a common use of linear bar codes is the military shipping label which contains the TCN and other transportation information. For the future, DOD plans to phase in two-dimensional bar codes for selected areas of use. Two-dimensional bar codes have a greater data capacity and are more durable than linear bar codes.

RADIO FREQUENCY IDENTIFICATION TAGS

B-20. RFID is used to identify, categorize, and locate people and materiel automatically within relatively short distances (a few inches to 300 feet). The RFID labels are known as tags or transponders. They contain information that can range from a permanent ID number programmed into the tag by the manufacturer to a variable 128-kilobyte memory that can be programmed by a controller using RF energy. The controller is usually referred to as a reader or an interrogator. An interrogator and a tag use RF energy to communicate with each other. The interrogator sends a RF signal that wakes up the tag, and the tag transmits information to the

interrogator. In addition to reading the tag, the interrogator can write new information on the tag, thus permitting a user to alter the tag's information within the effective range. Interrogators can be networked to provide extensive coverage for a system.

B-21. The Army uses an active RF tag that accommodates line-item detail information to provide ITV and standoff, in the box visibility of container contents. As an example, the tag, which contains data on the container contents, is placed on the container and then read as it passes interrogators located at nodes or other critical locations within the transportation system. RFID capabilities provided by active RF tags are beneficial when a user needs to locate and redirect individual containers. RFID may also be used in an austere environment where there are inadequate systems or communications infrastructures and to facilitate the AIS capture of asset data. The active RFID capability offers significant capabilities for yard management, port operations, and ITV.

OPTICAL MEMORY CARDS

B-22. OMCs use the optical technology popularized by audio CDs and audiovisual CD-ROM products. Information is written to the card in increments rather than at one time. An OMC can have data written to it in a sequential order on many occasions until all available memory has been used. An OMC is similar in size to a credit card and can be easily carried. DOD activities use OMCs when extensive content detail is required, such as for multipack, air pallet, container, trailer, and rail car shipments. The Defense Logistics Agency's AMS uses a DOD standard OMC. The primary objective of AMS is to facilitate automated receipt processing. OMCs are used best when a data audit trail is required or an extensive amount of data has to be stored.

SATELLITE-TRACKING SYSTEMS

B-23. A satellite tracking system provides the ability to track the exact location of vehicles and convoys. The latitude and longitude locations of trucks, trains, and other transportation assets equipped with a transceiver are transmitted periodically via a satellite to a ground station. Some systems also provide two-way communications between a vehicle operator and a ground station for safety, security, and rerouting.

B-24. Satellite tracking uses a cellular or satellite-based transmitter or transceiver unit to communicate positional information, encoded and text messages, and (in the case of sensitive DOD ordnance movements in the CONUS) emergency messages from in-transit conveyances to the ground station. Transceiver-based technologies also permit communications from a ground station to the in-transit conveyance. A user can compose, transmit, and receive messages

with very small hand-held devices or with units integrated with computers. USEUCOM is using satellites to track convoys and critical shipments as they move to and from Bosnia.

B-25. The following description clarifies how a satellite-tracking system works. A system has five components– a subscriber unit, satellite, earth station, NCC, and logistics managers. A subscriber unit is installed on the conveyance being tracked. The unit exchanges information with an earth station via satellite. The earth station is connected to a NCC that stores information in electronic mailboxes. Logistics managers access their mailboxes to receive information from subscriber units and return information to them.